

Serial No. 09/672,512  
Page 10 of 14

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OCT 30 2006

Remarks

Applicants thank the Examiner for his various telephone conversations with Applicants' attorney pertaining to this patent application. Further to the Examiner interview, and in further response to the final Office Action and advisory action, Applicants have made several amendments to the claims.

Claims 1-7, 9-16 and 18-30 are pending in the application. By this submission, Applicants have amended claims 1, 4, 7, 10, 13, 16 and 18 and have cancelled claims 2, 3, 11 and 12.

Claims 1-5, 6-7, 9-14, 15-16, 18-20, 22-24 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy (EP0926916A2, hereinafter "Roy") in view of Fukagawa et al. (US 6,188,913 B1, hereinafter "Fukagawa").

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roy in view of Fukagawa and further in view of Wong et al. (US 6,330,460, hereinafter "Wong").

Each of the various rejections and objections are overcome by amendments that are made to the specification, drawing, and/or claims, as well as, or in the alternative, by various arguments that are presented.

Entry of this Amendment is proper under 37 CFR § 1.114 since the amendment: (a) places the application in condition for allowance for the reasons discussed herein; (b) does not raise any new issue requiring further search and/or consideration since the amendments amplify issues previously discussed throughout prosecution; (c) satisfies a requirement of form asserted in the previous Office Action; (d) does not present any additional claims without canceling a corresponding number of finally rejected claims; or (e) places the application in better form for appeal, should an appeal be necessary. The amendment is necessary and was not earlier presented because it is made in response to arguments raised in the final rejection. Entry of the amendment is thus respectfully requested.

Any amendments to any claim for reasons other than as expressly recited herein as being for the purpose of distinguishing such claim from known prior art are not being made with an intent to change in any way the literal scope of such claims or the range of equivalents for such claims. They are being made simply to present language that is better in conformance with the form requirements of Title 35 of the United States Code or is simply clearer and easier to understand than the originally presented language. Any amendments to any claim expressly made in order to distinguish such claim from known prior art are being

514849-1

Serial No. 09/672,512

Page 11 of 14

made only with an intent to change the literal scope of such claim in the most minimal way, i.e., to just avoid the prior art in a way that leaves the claim novel and not obvious in view of the cited prior art, and no equivalent of any subject matter remaining in the claim is intended to be surrendered.

Also, since a dependent claim inherently includes the recitations of the claim or chain of claims from which it depends, it is submitted that the scope and content of any dependent claims that have been herein rewritten in independent form is exactly the same as the scope and content of those claims prior to having been rewritten in independent form. That is, although by convention such rewritten claims are labeled herein as having been "amended," it is submitted that only the format, and not the content, of these claims has been changed. This is true whether a dependent claim has been rewritten to expressly include the limitations of those claims on which it formerly depended or whether an independent claim has been rewriting to include the limitations of claims that previously depended from it. Thus, by such rewriting no equivalent of any subject matter of the original dependent claim is intended to be surrendered. If the Examiner is of a different view, he is respectfully requested to so indicate.

**Rejections Under 35 U.S.C. 103(a)**

**Claims 1, 4-7, 9-10, 13-16, 18-20, 22-24 and 25-30**

Claims 1-5, 6-7, 9-14, 15-16, 18-20, 22-24 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roy (EP0926916A2, hereinafter "Roy") in view of Fukagawa et al. (US 6,188,913 B1, hereinafter "Fukagawa"). Claims 2, 3, 11 and 12 have been cancelled. As such, Applicants' arguments are directed only to claims 1, 4-7, 9-10, 13-16, 18-20, 22-24 and 25-30.

Roy and Fukagawa singly or in combination do not teach or suggest Applicants' invention as a whole. As presented in Applicant's earlier response, Roy discloses using location information and an appropriately designed transmitter array to simultaneously transmit information to different network users on a common channel and such objective is achieved by source location estimation and spatial demultiplexing of multiple signals in the same channel. Accordingly, Applicant takes the position that Roy is not concerned with or is not considering the actual manipulation of directed energies in the manner claimed. In the Final Office Action, the Examiner offers that Roy does teach such features of the subject invention by indicating that (a) FIGS 8-9 of Roy show a transmitter carrying a signal to at

Serial No. 09/672,512

Page 12 of 14

least two terminals by directing energy in a plurality of directions and (b) Paragraph 0089 and equations 0.3-0.5 of Roy clearly describe that the amount of energy directed in the direction of each terminal is a function of the location and acceptable receive strengths of at least two of the terminals. In response, Applicant does not agree with the Examiner's assessment of the teachings in Roy.

Roy specifically states in the sentence directly proceeding Eqn. 0.3 that, "(d)ue to transmitter and antenna characteristics, the baseband signal... is a function of the direction in which it is broadcast in the medium..." and nothing more. That is, there is no teaching of taking at least two terminals into consideration when broadcasting a given signal in a given direction in Roy. The aforementioned sentence does continue (after Eqn. 0.3) by stating that the gain and phase characteristics ( $a_k$ ) of the kth antenna and transmitter for the ith channel are a function of the direction  $\theta$ , but again this is taken within the context of a single transmission without regard for other signals being transmitted. Eqn. 0.4 is nothing more than a summation of all the signals transmitted in a given channel  $\omega_i$  which results in a single vector that indicates the overall signal strength/direction of said channel. Eqn. 0.5 relates to the received (not transmitted) signals seen in Eqn. 0.2 (as per the first sentence of Para 0090); therefore, this equation does not support anything related to directing energies towards a terminal.

Close inspection of the written specification that describes FIGs. 8 and 9 of Roy also fail to support the Examiner's position. At Para 0053, FIG. 8 is described as an illustration of the method used to overcome the problem of multiple signal reception at a mobile wireless unit. As per this portion of Roy, "(m)ultiple signals (64) from signal modulators...are appropriately combined by a spatial multiplexer (66) under control of the SDMAP (48) so as to eliminate all cochannel interference at the wireless units (20, 22, 24)." Further, "...by appropriate design of the spatial multiplexer, wireless unit (20) receives none of the signal being transmitted to units (22) or (24), and similarly for the other two units." As such, Roy is clearly showing that any type of interference (whether it be constructive or destructive) is mitigated by spatial multiplexing; thus, no part of any signal transmitted to one wireless unit will be used to assist in the transmission to another wireless unit. At Para 0062 of Roy, "...the spatial multiplexer (66) shown in FIG. 9 is to multiplex one or more signals (64) into a particular channel, but different spatial channels. The spatial multiplexer (66) appropriately combines the signals (64) and provides on output for the particular channel... appropriately

Serial No. 09/672,512

Page 13 of 14

combined means combined so that each wireless unit receives only the signal intended for it. No other signals arrive at that particular wireless unit receiving in that (frequency) channel."

By these citations, Roy is plainly disclosing a transmission scheme that is completely inopposite to that of the subject invention in that no consideration is given to energy directed to neighboring terminals (wireless units) when transmitting a signal to a given terminal (wireless unit) in Roy. Therefore, it is respectfully submitted that the new Examiner-offered teachings of Roy fail to teach, disclose or suggest that the amount of energy directed in the direction of each terminal (mobile unit) is a function of the location and acceptable receive strengths of at least two of the terminals as claimed in any of Claims 1, 10 or 18.

Furthermore and as explained earlier in the prosecution history, the Fukagawa reference fails to bridge a substantial gap between Roy and Applicants' invention. Fukagawa is used solely to offer a teaching of azimuth direction radiation. Regardless of whether this teaching is valid, there is still no teaching or suggestion overall in the references of directing energies as a function of locations and acceptable receiving strengths of other terminals. Since the combination of Roy and Fukagawa fails to teach or suggest this advantage or improvement in the art, the combined references fail to teach or suggest Applicants' invention as a whole. Thus, Roy and Fukagawa, alone or in combination, fail to teach or suggest Applicants' invention as a whole.

Since all of the dependent claims that depend from the currently amended independent claims include all of the limitations of the respective independent claim from which they ultimately depend, each such dependent claim is also allowable over Roy in view of Fukagawa.

Therefore, Applicants' claims are allowable over Roy and Fukagawa under 35 U.S.C. 103(a). Accordingly, Applicants respectfully request that the Examiner's rejection be withdrawn

#### Claim 21

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Roy in view of Fukagawa and further in view of Wong et al. (US 6,330,460, hereinafter "Wong").

This ground of rejection applies only to a dependent claim, and is predicated on the validity of the rejection under 35 U.S.C. 103 given Roy in view of Fukagawa. Since the

Serial No. 09/672,512  
Page 14 of 14

rejection under 35 U.S.C. 103 given Roy in view of Fukagawa has been overcome, as described hereinabove, and there is no argument put forth by the Office Action that Wong supplies that which is missing from Roy and Fukagawa to render the independent claims obvious, this ground of rejection cannot be maintained.

Therefore, Applicants' claims are allowable over Roy, Fukagawa and Wong under 35 U.S.C. 103(a).

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Conclusion

It is respectfully submitted that the pending claims are now in condition for allowance. Reconsideration and allowance are, therefore, respectfully solicited.

If, however, the Examiner still believes that there are unresolved issues, the Examiner is invited to call Eamon Wall at (732) 530-9404 so that arrangements may be made to discuss and resolve any such issues.

Respectfully submitted,

Dated: 10/30/06

  
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